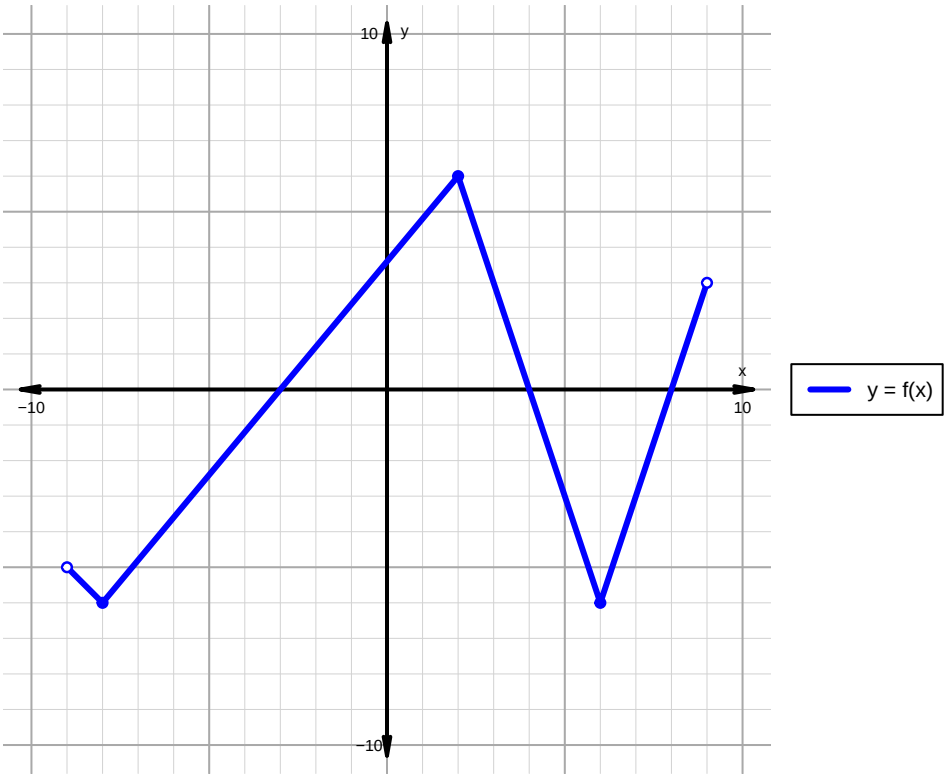
Name: Date:

Intervals, Transformations, and Slope Solution (version 40)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-3, 4) \cup (8, 9)$
Negative	$(-9, -3) \cup (4, 8)$
Increasing	$(-8, 2) \cup (6, 9)$
Decreasing	$(-9, -8) \cup (2, 6)$
Domain	$(-9, 9)$
Range	$(-6, 6)$

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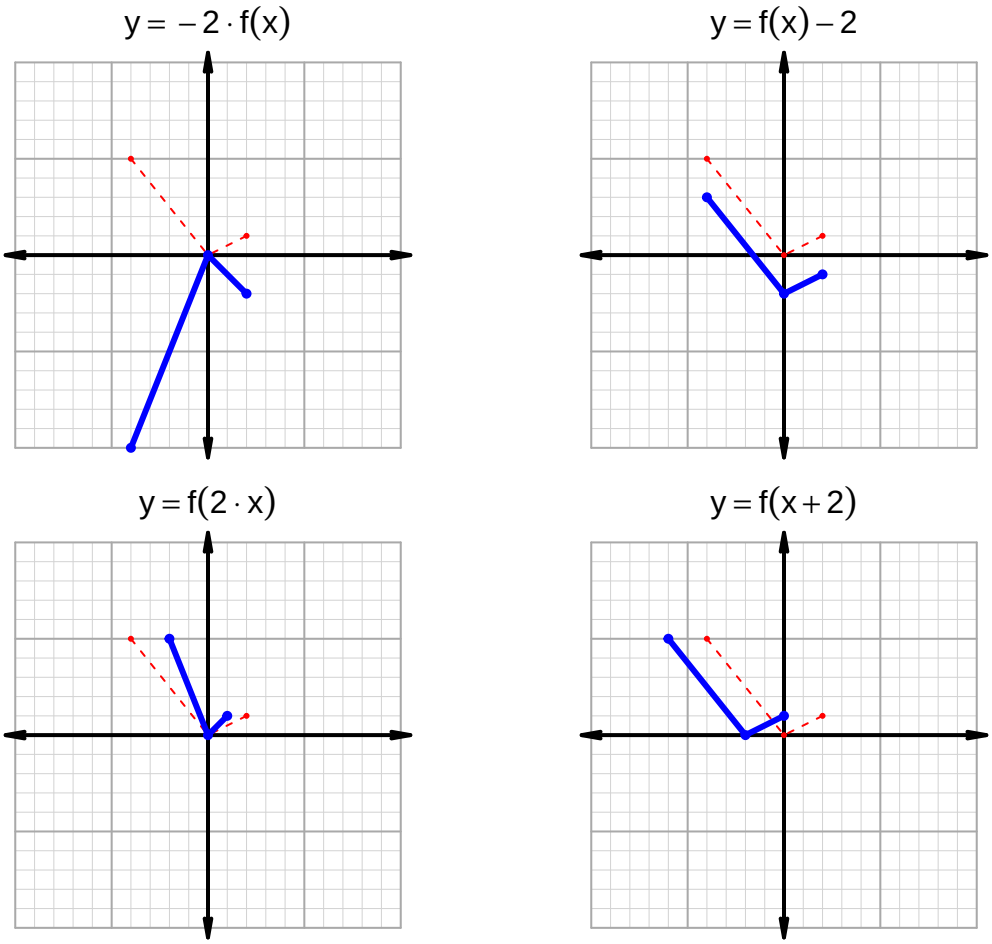
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 46$ and $x_2 = 56$. Express your answer as a reduced fraction.

x	$g(x)$
9	46
25	56
46	25
56	9

$\frac{f(56)-f(46)}{56-46} = \frac{9-25}{56-46} = \frac{-16}{10}$

The greatest common factor of -16 and 10 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-8}{5}$$